Amendments to the Claims:

If these amendments are accepted, this listing of claims will replace all prior versions, and listings, of claims in the application. These amendments introduce no new matter and support for the amendment is replete throughout the specification and claims as originally filed. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter, or agreement with any objection or rejection of record.

Listing of Claims:

1-9 CANCELLED

10. (PREVIOUSLY PRESENTED): A method of repairing a damaged nerve in a living organism comprising:

selecting one or more axons in said damaged nerve;

harvesting a donor axon segment;

positioning said donor axon segment at a severed location of a selected axon by applying a dielectrophoresis signal in proximity of one or more of said donor axon or said selected axon; and

inducing fusion of said donor axon segment by applying an electric signal in proximity of one or more of said donor axon or said selected axon

11. (ORIGINAL): The method of claim **10** further comprising:

cutting one or more ends of said donor axon and/or said selected axon.

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13. CANCELLED

14. (ORIGINAL): The method of claim **10** further comprising:

digesting one or more nerve portions to allow manipulation of individual axons.

15. (ORIGINAL): The method of claim **10** further comprising:

using a MEMS axon surgical platform enabling precise manipulation of axons of less than one and up to a few microns in diameter.

16. (ORIGINAL): The method of claim **10** wherein said living animal comprises a human.

17. (ORIGINAL): The method of claim **10** wherein said living animal comprises a mammal.

18. (ORIGINAL): The method of claim **15** further wherein:

said MEMS axon surgical platform enables manipulation of axons directed by a human surgeon.

19. (PREVIOUSLY PRESENTED): A method of repairing a damaged nerve in a living organism comprising:

selecting one or more severed axons in said damaged nerve;

positioning one or more of said selected severed axons in close proximity to one or more corresponding severed axons on another side of said damaged nerve by applying a dielectrophoresis signal in proximity of one or more of said donor axon or said selected axon; and

inducing fusion of said donor axon segment by applying an electric signal in proximity of one or more of said donor axon or said selected axon.

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69. (PREVIOUSLY PRESENTED): The method of claim **19** further wherein:

said selecting, positioning, and inducing are performed without determining whether a corresponding severed axons is matched to axon segments to which they were attached before becoming severed.

70. (PREVIOUSLY PRESENTED): The method of claim **19** further comprising:

using a nanoknife to cut said one or more severed axons prior to said inducing.

71. (PREVIOUSLY PRESENTED): The method of claim **19** further comprising:

placing a three-dimensional microstructure over an area containing said axon;

said three-dimensional microstructure comprises:

one or more nanoknives used for cutting axons;

one or more actuators for moving said nanoknives; and

one or more effector electrodes for moving axons.

said three-dimensional microstructure is smaller than approximately one cubic millimeter.

72. (PREVIOUSLY PRESENTED): The method of claim **71** further wherein:

said three-dimensional microstructure is smaller than approximately 100 cubic millimeters.

73. (PREVIOUSLY PRESENTED): The method of claim **71** further comprising:

placing said three-dimensional microstructure in a surgical frame, said surgical frame comprising one or more gaskets for holding one or more nerves to be repaired;

said three-dimensional microstructure and said surgical frame comprising one or more microfluidic channels for delivering reagents; and

said three-dimensional microstructure comprising one or more waveguides to enable optical monitoring, visualization, and /or use of light sources.

74. (PREVIOUSLY PRESENTED): The method of claim **71** further comprising:

moving an axon segment using a pin/probe and plate electrode pair operably connected with said microstructure such that a region of strongest field is towards the pin electrode thereby stretching an axon towards said pin/probe electrode.

75. (PREVIOUSLY PRESENTED): The method of claim **19** further comprising:

moving an axon segment by precisely positioning arrangements of micro-electrodes near to said axon segment; and

applying electrical signals precisely to particular electrodes to effect precise movements and/or manipulations.

76. (PREVIOUSLY PRESENTED): The method of claim **75** wherein said precisely positioning of arrangements of electrodes comprises positioning an addressable grid of electrodes above and/or below said axon segment and further comprising:

observing said axon segment in relation to said addressable grid of electrodes;

selecting one or more electrodes that will effect a desired movement of said axon segment; and

applying a predetermined energy signal to said one or more electrodes; and further comprising:

observing an induced movement of said axon segment in relation to said addressable grid of electrodes;

selecting an additional one or more electrodes that will effect a desired further movement of said axon segment; and

applying a predetermined energy signal to said additional one or more electrodes.

77-78. CANCEL

79. (NEW): The method of claim 10 wherein said inducing further comprises:

applying a laser in proximity of one or more of said donor axon or said selected axon.

80. (NEW): The method of claim 10 wherein said inducing further comprises:

manipulating cell biological processes to enhance axon repair in proximity of one or more of said donor axon or said selected axon.

81. (NEW): The method of claim 19 wherein said inducing further comprises:

applying a laser in proximity of one or more of said donor axon or said selected axon.

82. (NEW): The method of claim 19 wherein said inducing further comprises:

manipulating cell biological processes to enhance axon repair in proximity of one or more of said donor axon or said selected axon.